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"O fortunatos nimium sua si bona norint
Agricolae." . . . VIRG.

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AGRICULTURE.

Improvements in the cultivation of Wheat and Inspection of Flour.

We have received an interesting memoir, furnished by B. U. Coles, Esq. to the New York County Agricultural Society, upon the cultivation of Wheat and inspection of Flour; in which he has suggested several methods to improve them, that are so general in their nature as to be every where applicable; and we therefore, present such extracts as will place the opinions of that writer, fairly before our readers. He has sustained, by very plausible reasons, an interesting, and to us, a very novel, but unsatisfactory proposition. We mean, the abandonment of our inspections of quality. Still we think that the publication of his argument may be useful, by leading others to assist us in the examination of this subject. To improve the quality of our wheat, he urges us to relieve it, before seed time and harvest, from impurities contained in it; such as rye, cockle, smut, chess, or cheat, and spring wheat. In this recommendation we heartily concur with him. We wish that his suggestions on this point, as conveyed in the following extracts, may be carried into practice by the cultivators of wheat. ON RYE AND COCKLE he justly remarks:

"The remedy for these evils is to sow no seed, but such as is free from these impurities; but should they be discovered in the growing crop, they ought to be removed. The rye plant is conspicuous, as it overtops the wheat plant, and can be cut down any time before the harvest, with very little labour and expense. The cockle plant is so entirely distinct in its leaves, and flower, that it can be removed by the hand, or cut down at any period of its growth.

SMUT, he appears to think,

"Cannot be attributed to a corruption of the interior or kernel of the grain; otherwise, this corruptive process would extend beyond the part first attacked, and involve in destruction a part of the stalk, and particularly the bran; besides the powder called smut, would be destroyed in its uniformity, by such putrefactive decomposition."

And he infers that,

"Smut cannot be produced by an insect, for the closest observers of nature can discover no relation between the economy of the insect tribe and this disease. The sting of an insect will cause the juices of a plant to exude in the process of circulation; but such an effect is exhibited on the exterior part of the plant attacked, the fruit is only withered or shrunk, its nature is not entirely changed as in this instance; or an insect may resort to a plant in order to deposit its nit safe from external injury, and where its young may find congenial food. But there is no analogy between this habit of the insect tribe and smut; for still the question returns, how has the farinaceous part of the grain so completely changed its nature?"

Since then he finds no analogy between the corruptive process, nor this habit of the insect tribe and the formation of smut; he concludes that,

"The better opinion seems now to prevail; that it is a plant known as a parasitical fungus, the seeds of which, being

extremely minute and light, are carried about through the air, and lodging upon the wheat while in blossom, assume the place of the kernel, where they vegetate and are matured."

And he has endeavoured to support this opinion, by reference to several high authorities on the subject of smut; as well as, by adverting to the disease called blight, rust, or mildew. His authorities are of the highest order. They differ, however, from each other, upon the nature or origin of the substance, and they are of course unsatisfactory. And his own opinion is certainly deprived of much of its weight, by the contrast, which he has drawn in the following passage, between rust and smut.

"Most parasitical fungi have the ability of protruding their little fibres within the corticle of the plant, from whence they derive their nourishment, and from which they cannot be easily dislodged; but it is the singular property of smut, that possessing no such capability, it seeks a covering from external injury, and the means of life and growth within the epidermis of the grain, and while it devours the juices intended for the farina, leaves those for the bran to perform their office."

We confess that our present view of this subject inclines us to think that smut is not a plant. We have considered it a disease of whose nature we possess no satisfactory knowledge. And we wish experiments to be made, to ascertain its true origin. We have thought that its immediate cause, might be the diseased state of some vessels, whereby the juices of the plant were suffered to exude and arrange themselves chemically into carbonaceous matter, instead of being converted into starch and gluten by a healthy action of those vessels. The remote cause we apprehend might be found in an unusual absorption of highly nutritive matter, and this be prepared by the action of great humidity upon soluble substances, deposited with the seed, or its previously existing in the soil. How the juices of diseased wheat could become smut, or how the healthy plant perfects grain, we do not pretend even to imagine. But our view of this subject may be tested pretty fairly, by forcing the maturation of wheat, by the free application of very nutritive materials, in solutions or powders, according to the weather. We repeat, however, that our opinions are unsettled on this subject; having never yet seen a satisfactory explanation of the matter. And we will now pass to his observations upon the various methods of preparing seed wheat, that contains smut, in order to destroy its injurious properties. On this head he makes the following observations;

"It is evident that the first step to eradicate this evil, is to sow no seed wheat but what is free from smut. If such cannot be readily procured, then wash the seed in common water, changing frequently the water until all the smut be removed. There are found in different communications on this subject, many receipts for a proper wash, such as diluted sulphuric, and other acids, alkaline solutions, &c. but it is evident that the effect of these is altogether imaginary, for as the only object

is to remove the smut and cleanse the grain, experience shows that it can be done as easily by soft water, as by any mixtures, and we are spared the trouble and expense of procuring a nostrum, which cannot be more effectual, and which frequently when applied by unskilful hands, will act upon the grain violently, and to the injury or destruction of its germinating powers."

He then gives us in a note the following very valuable account of the effects produced by several steepings.

"Experiments to ascertain the value of the different Steeps, in curing the smut in wheat, by Mr. B. Bevan, Leighton, Bedfordshire, 19th July, 1803. with twelve samples of good wheat A, and twelve samples of very smutty B."

Solutions in which the wheat was steeped 24 hours	Specific gravity of steep.	Number of smutty ears in 3 sheaves.
1. Solution of potash	1,357	A 1 81
3. — Nitrate of potash	1,080	7 115
8. — Common soot	1,025	0 123
9. — Lime saturated	1,003	0 2
10. — Nitric acid	1,016	none grew
12. — Sulphuric acid	1,050	0 0
13. Dry in its natural state		6 323
14. Washed in common water		not sown 107

We rise from an examination of the results of these experiments without being able to account for the recommendation of water by Mr. Coles as the best steep, when it appears from the table that 107 ears of smut were formed after using water; whilst none were found when sulphuric acid was employed, and only two ears were found when lime was applied. To our apprehension, the experiments prove conclusively, that a solution of sulphuric acid is the best steep that can be used, and that lime ranks the next, whilst common water and solutions of potash, nitre, or soot appear to prevent the formation of about two thirds of the smut that would occur if they were not used, and that they are capable of being so far beneficial. But as lime abounds in our country, it certainly should be procured for this purpose, and be preferred by those who are not well acquainted with the acids, as the use of nitric acid being destructive. This acid dissolves gluten with activity; and when it is highly concentrated, if poured upon dry impalpable powder of charcoal, it puts it instantly on fire. It might have been supposed from its well known action upon carbon, that a weak solution of it would make a good steep to clean all smutty seeds. But the experiments of Mr. Bevan clearly prove, that this application of it destroys the germinating powers of wheat. And it may be that this injury is produced by its dissolving some of the gluten of the grain; for upon the action of this substance on the starch and saccharine principles of the seed, the vegetative process appears, in most cases, entirely to depend;

other circumstances such as air, water and heat being at the same time favourably present. Difficult as it may be, in most cases, to explain the mode of operation; still in this instance, as in many others, we have the lessons of experience to guide our practice. They admonish us never to use nitric acid in our steeps. And they as positively direct the application of lime or sulphuric acid, whenever we are so unfortunate as to be obliged to use smutty grain as seed. By rendering smut less soluble, they most probably destroy its injurious character; which suggestion is hazarded in illustration of our idea of the origin of the disease. We will here leave this part of the subject, for we are in danger of passing beyond our proper sphere. We have no pretensions in chymical science, and should therefore make none. It is most probable that we ought to have suppressed our thoughts upon these operations. And we would have done so, but for our desire to lead others into this field of inquiry.

Of chess or cheat, it is remarked in the memoir that,

"It is a well known plant, possessing every characteristic of a distinct vegetable, which reproduces itself, and therefore there is no reason for the supposition that wheat will produce chess. Farmers have not been sufficiently attentive to the circumstances under which chess makes its appearance; but have assumed it as a fact, that because the chess crop is large when the wheat crop is small, that the former is produced by the latter. If this be the case, the same power of transforming themselves into chess must be attributed to rye, barley, and oats, as they frequently contain chess, and even Indian corn, among which this plant is often found growing. But it is not so, for nature has ordained that every vegetable shall reproduce after its own kind, and in the whole arrangement of her works evidently abhors such transformation. Chess is placed in the ground either by sowing the seed, or, as is frequently the case is carried thither in the manure; and when the season is favourable for the wheat, the chess is subdued; but where it is unfavourable for the wheat, then the chess, uncontrolled, becomes more prolific and abundant. If care be taken that in cleaning the wheat, the rejected matter does not go among the manure, and that the wheat when sown is free from chess, it is very certain that there will be no chess in the crop."

Summer wheat he observes,

"Is an inferior grain; it ought not therefore to be mixed with the winter wheat any more than rye, but should be brought to market in a separate state."

And upon the careless or intentional mixing of different qualities of wheat by merchants, he very properly remarks.

"If the merchant could be induced to keep separate the different qualities of grain as they are brought to market, the effect would be almost instantaneously, to give us a large proportion of wheat from our state, equal in value to any whatever. The holders of the wheat would in such a case not receive a less price for the inferior grain, and would obtain a much higher price for the superior. The motive for this practice of mixing the different qualities of wheat together, is no doubt to raise the quality of the inferior; but if the subject be well understood, it will be found that the effect of this reducing system always is, rather to depress the good article, than to increase the value of the indifferent. I have thus endeavoured to state the causes of the depreciated nature of New York wheat incident to the grain itself, and have annexed to each the mode of removing them; but it will easily be perceived of how little benefit are all exertions to effect an improvement, unless a strong appeal be made to the interest of the

farmer and merchant, by an adequate distinction in price between the different qualities of wheat, as they are free from, or mixed with impurities, which difference in price shall act as a stimulus to neat and judicious tillage. I would suggest therefore the propriety of some rule, which shall distinguish between the foul and clean wheat."

We have thus given a full view of the methods recommended by Mr. Coles as worthy of being adopted by our farmers, to whom they present invaluable suggestions on the subject of improving the quality of their wheat. And we shall now lay the views of that gentleman upon the subject of our inspections of quality as fairly before our readers: putting in Italics those passages to which our concluding remarks are intended to be particularly applied.

He observes,

"I am fully however of the opinion, that the radical source of the evil we now lament, may be traced to the principles upon which the office of inspector of flour is constituted: and that unless the duties of that office are entirely changed, all efforts to correct the evil will be of but temporary benefit. Upon this subject I shall now enlarge, and endeavour to establish the truth of the proposition, that it is the tendency of all inspections of the quality of an article, to reduce it, unless such quality can be tested by well defined rules of unerring accuracy: from which it follows, I think, that the duties of inspectors should be confined to quantity alone.

"It is with some diffidence that I enter upon the consideration of this point, because I fear that the community, from prejudice in favour of an old custom, the propriety of which has perhaps been hitherto unquestioned, will be unwilling to acknowledge the justice of any objections against it, unless they lead to something like mathematical demonstration, of which I fear the subject does not admit; but if my conclusions are not equivalent to arithmetical certainty, they approach, I think, as near it as any moral proof can do.

"When an article of merchandise is prepared at any place, and its quality decided by an individual appointed by law for that purpose, the character of the article is derived from that place and that individual, and not from the person who manufactured or prepared it. Thus flour is designated as New York flour, in contradistinction to Richmond, Petersburg, Baltimore, or Philadelphia flour;—New York beef or potash as contradistinguished from Boston beef and potash;—Virginia tobacco, as contradistinguished from Maryland or Kentucky tobacco: proving that the general character given to the article at the place of export, is that by which its value is estimated, rather than the reputation of the person who produced it.

"This is a 'good inspection,' and that 'is a bad inspection,' are terms very usually employed, to denote the value of the article offered for sale: the reputation of the manufacturer, or producer, being thus wholly kept out of view, and merged in the inspector's brand.

"The purchaser regards very little the intrinsic merit of the article itself, but only the general character it has acquired in conjunction with others of a similar kind, prepared at the same place, and designated by the inspector as being of the same standard."

"The tendency of this principle is truly unfortunate, as it levels all distinction of persons, and prevents the acquisition of individual reputation: by its operation, the judicious efforts of one person are counteracted by the ignorance or mismanagement of another, and the zeal and merit of some, are restrained and impaired by the supineness of others. All encouragement to emulation is withdrawn, and that competition, which is the parent of improvement, becomes completely paralyzed. It is in producing these pernicious effects, that the inspector of flour is an important agent.

"When the quality of flour is subjected to the examination of an inspector, he tests it by some rule or standard, which from its nature must be very inaccurately defined, and for the most part altogether ideal: but as it is the characteristic of quality to vary, it is extremely rare that the article inspected will conform to the standard set up, or if it do, that standard must be ever varying, so as to prevent the long continuance of any uniform plan. But as the inspector's mark is the criterion of its worth, whatever may be its intrinsic merit, all endeavour to reduce the quality, and yet obtain from the inspector the mark of the highest value; for however superior to the inspector's standard an article may be, the seller will not receive for it an additional farthing, either at home or abroad.

"How effectually, by this system, are the designs of nature perverted;—the fair ground of competition should be, who shall furnish the best article and at the cheapest rate: a principle to which we are indebted for most of the numerous comforts we enjoy, derived from the arts; but in this instance the object of competition is, who shall make the poorest article, and obtain for it the mark of the highest quality, which entitles it to the greatest price; a ground of contest, that it may readily be conceived must lead to an endless system of trick and imposture against which, how difficult it must be for any individual successfully to contend, even when his interests and his feelings both combine to render it desirable. But in the present case I regret to say, that the interest and the feelings of the inspector are with the manufacturer. The subject of his office is prepared by the manufacturer, and the emoluments are dependent upon him; and if those emoluments are derived from fees rather than a stated salary, it is evident that the greater the quantity offered for inspection, the greater will be the profits of the office. Thus every inspector is interested to increase the subject matter of his office. All facilities, therefore, afforded to the manufacturer—every advantage thrown into his scale, are inducements to him to multiply his article: and on the other hand, the more the difficulties in the management of his business are augmented, the more is he embarrassed, and disposed to confine his operations within moderate bounds.

It is very difficult, and requires unwearied attention, nice calculation, and active industry, uniformly to give satisfaction to the consumer and profit to the manufacturer. The Creator has wisely ordained, that success in life shall be the reward of great exertion, a principle to which the human disposition is so very repugnant, that men would sink into indolence and lethargy, were they not constantly awakened and roused into action, by the penalties attached to inactivity. Every person feels the force of this besetting sin; it is the few who possess vigour and energy enough to resist its influence and check its progress, who succeed. But when the active energy and skill of one individual, as in this case, are of no more avail than the indifference and carelessness of another, the great stimulus to exertion is withdrawn, and all become listless and negligent.

"Again, when an inspector designates the quality of an article, that responsibility or accountability, which is the great security for correct conduct and judicious management, is completely taken away from all parties. If the article is complained of as being of inferior quality, the maker of it justly replies, that it is the inspector, whom the law has vested with the power of stamping its character, and to him does he refer to explain how it has happened that an inferior article should have received the denomination of the superior. This is at all times a sufficient apology on the part of the manufacturer, and furnishes him with a convenient and legal cover, for his voluntary or unintentional negligence in the management of his business. It would be some protection from the pernicious consequences of this system, if the law, while it relieved the manufacturer from responsibility, should have fixed it upon the inspector; but unfortunately this is not the cause; for notwithstanding an inspector should give to an article a character much beyond what it intrinsically merits, yet he is not liable to make good in damages to the person who suffers the injury

sustained. Could such a principle be established, it would be impossible to find a man sufficiently affluent to execute the office on such terms, for the wealth of no individual would be competent to satisfy demands which would then be made, in consequence of errors (proceeding from ignorance, negligence, or design) committed in the performance of his official duties. Indeed it cannot be, from the very nature of things, that the inspector should be made responsible in his fortune. Neither is he in reputation, for if he were, how deep in infamy and disgrace must those inspectors have sunk, under whose administration the staple commodity of our state has declined to so degraded a condition. *All those who have attended to this subject for a number of years past, must be sensible that neither the manufacturer or inspector are at all responsible, either in their fortune or reputation, for the good or bad quality of the articles prepared for commerce, and which are subject to inspection.*

"The feelings also of the inspector, as well as his interest, coincide with the manufacturer. It is rare when an article is offered for inspection that the purchaser is present; but the seller is almost always either present himself or represented. Thus is an opportunity afforded, uninterrupted by the presence and claims of the purchaser, to operate on the passions, interest, or feelings of the inspector, and by arguments drawn from public or private considerations, to induce a partial determination. The interest and feelings of the purchaser, who is unknown, are frequently neglected, and the injury to the one being remote, while that to the other is immediately experienced, the obligation to an impartial judgment, which should be sacredly regarded, is often slightly felt and but faintly practised. But I do not hesitate to say, that it is utterly impossible for any inspector to determine the intrinsic merits, and properly decide the value of this article, by the simple examination of the eye, (the mode usually practised,) unassisted by a knowledge of those latent circumstances, which are possessed by the maker alone.

"It is essential to the right conception of the true value of flour, that the purity of the raw material, and the mode of manufacturing it, should be understood; for any person familiar with the subject knows full well, that frequently the eye is gratified with the appearance of the flour, which when baked into bread will be found to disappoint the expectations that had been formed of it; and on the contrary, it frequently occurs that the article though not so fair to the sight, will give great satisfaction when used. Thus if wheat is contaminated with smut, the full measure of that defect will not be perceptible in the flour; but when mixed into dough, and baked into bread, the whole inferiority of the raw material is fully brought to view, in the dark and disgusting appearance of the bread. This is the case, though not to the same extent with the other impurities with which wheat is usually contaminated.

"There is also, in passing through the hands of the manufacturer, a variety of modes, by which an inferior article, or the inferior parts of the same article, may be so intermixed with the superior, as materially to injure its bread-making qualities, though to the most rigid scrutiny it may appear well fitted to the purpose for which it was intended.

"There is one defect in wheat which is exceedingly injurious, and which it is impossible to detect in the flour by the eye alone, and that is if the wheat be grown in the ear. Flour from this description of wheat may, to all appearance, possess every quality of excellent meal; but it is well known that it is impossible to make from it bread of a wholesome and digestible nature; because the circumstance of the grain being grown, destroys the susceptibility of the flour to be acted upon by leaven, and therefore it resists the influence of exciting causes, and remains a dead and inactive mass. After all these observations it may immediately be inquired, why the southern wheat and flour is so much superior to the New York wheat and flour, as the former have inspectors as well as the latter? To this I reply, that the same causes have in fact depreciated the southern flour, and are progressing with unerring steps to reduce it also to

the New York standard. All who are familiar with the subject, have remarked how degenerate of late has become a great proportion of the southern flour: the Fredericksburgh flour is materially depreciated, and has not for some time past ranked above the New York. Petersburg flour is daily becoming more degenerate, and the operations of last year have much injured the reputation and value of the Philadelphia flour. Richmond flour still preserves its superiority, but not its original purity, and it is a familiar remark among the dealers, that even this description has of late much degenerated. Each of these places have inspectors, who if they have not promoted, at least have not been able to arrest this general tendency to deterioration; and it is a correct and sufficient reply to those who still urge the comparative excellency of southern flour, that its prostration is only retarded by the absence of competition, and that it must eventually share the fate of others.

"Nor can I here avoid remarking also the agency of the New York inspectors in producing the degeneracy of the southern flour. New York is the great mart for southern produce, and a greater part of the flour exported from thence passes through this market. It can readily be conceived how much it is the disposition of the smaller markets, to conform themselves to the larger, and to comply with the rules set up by the large markets, whether they be to enhance or depreciate the quality and value of an article. *I think it is evident therefore, that unless some measures be adopted of energy and effect to arrest the general tendency to depreciation, that the whole flour of the United States, and the wheat as connected with it, will be reduced to a base and unworthy character; a circumstance which will deeply wound the interests of our country, by depriving us of those markets, which we now supply in consequence of the goodness of our article.*

"I am satisfied that the idea of the inspector of the quality of an article is peculiar to this country; for as far as I can inform myself, (and I have taken considerable pains for that purpose) there is no such officer in Europe as inspector of the quality of flour, or any other article that does not admit of mathematical precision. The strength and purity of spirits is tested by the hydromer, the quantity of cloth is ascertained by the yard measure, wine by the gallon, sugar by the pound weight; but the qualities of these articles, as well as that of flour, have in Europe been left, as they always should be, to the discernment of the purchaser. It is not, however, flour alone which has been debased by the inspectors of quality; every article of our country which has been subject to such baneful supervision has experienced a similar depreciation: ashes, beef, pork, and tobacco, have all been degraded by the same pernicious influence; and however some of these articles may have emerged from their low and degraded condition, their improvement is to be attributed much more to severe pressure upon those who prepare them for market, and who have suffered severely from their degeneracy, than to any benign agency of inspectors. *In proof of this fact, I will mention as an instance the recent attempt to improve the New York flour. In consequence of its degraded state it had been almost wholly excluded from those markets heretofore supplied by us; a circumstance which has operated painfully upon the manufacturer's interest, and taught him the necessity of improving the article, in order to bring it again into consumption; a necessity however not created by the inspector, and an improvement rather adverse than consonant to the views of that officer.*

"If then I have succeeded in proving that the inspector of flour is the primary and continued cause of the evil we now lament; if it is the natural tendency of the exercise of that officer's functions to depreciate the subject of his care and attention; if he withdraws that responsibility from the manufacturer, which can alone form the true basis upon which rests a security for the correct, upright and beneficial management of his affairs, and does not assume that responsibility himself, either in his reputation or his fortune; if he level all distinctions of persons or exertions, and prevent desirable competition; if from the very nature of the article, no person but the manufacturer can ful-

ly estimate its value and merit, it evidently I think follows, that the office of inspector should be abolished as it respects the quality of the article, and be entirely confined to quantity. Thus will each manufacturer be placed on his own exertions, and become responsible in his reputation, fortune, and future prospects, for his good or bad management. Until this reformation be effected by legislative interference, and until the office of inspector shall be constituted upon entirely new principles, it is much to be apprehended that all efforts towards permanent improvement will be in vain. *It will perhaps be objected to this change in the system of inspection, that the community would thereby be exposed to many impositions; and that this would be the case to a limited extent, cannot be denied, but the effect of such a measure would only be to substitute (if I may so express myself) impositions of but partial operation, which could be guarded against, and for which there would then be a remedy, for those which are now universal, and what is worse, in a great degree encouraged and legalized by the present system of inspection.*

Our readers have now before them the ingenious reasons by which Mr. Coles seeks to maintain his unfavourable opinion of inspection of quality. And although his views may not be adopted, still the investigations which he has opened, may lead to practical and useful results. His opinions seem to rest upon three propositions:

First, That it is impossible satisfactorily to define the qualities of flour.

2ndly. That it is the interest and practice of inspectors to permit the character of flour to become gradually more and more degraded, that by increasing the quantity manufactured, their fees may increase.

3rdly. That it is the interest of the manufacturer, to make his flour rather below, than equal to, or above the standard, because he can get as much for the worst, if it passes inspection, as he can for the best.

These are substantially the reasons upon which he founds his opposition to inspections of quality, and we candidly admit, that after having impartially and attentively considered them, we are not convinced that it is necessary, or could even be advantageous to abandon regulations which have been so universally adopted, and so implicitly relied upon, in this country.

For although we may not be able to "define the quality of flour with mathematical accuracy," still we can reach a degree of probability so near to moral certainty, as to assure us of the intrinsic, relative value of commodities. By causing many trials of flour to be made by skillful Bakers, under the eyes of honest Inspectors, these taking critical notice of the colour, taste, smell, tenacity, and fineness of the different parcels, and comparing the results; we should suppose, that a standard could be fixed to answer every commercial purpose. And, also, that this standard could be as easily maintained. For practice would quicken the perceptions, and experience correct the decisions of the inspectors, whose integrity is guaranteed by the most solemn sanctions. Nevertheless, there would still be room for the judicious exercise of a superintending care on the part of a superior officer, and advantages be found, in the unceasing vigilance of our councils, or those who legislate upon the subject of inspections. Frequent investigations should be made, that the laws might be amended, or the officers removed, as should appear to be necessary. We have in

this city recently experienced the good effect of a revision of the laws establishing our standard, and this recollection leads us to the consideration of the second proposition.

We think that Mr. Coles has been peculiarly unfortunate in the opinion which he has advanced in relation to the disposition of inspectors, for we know that the flour inspectors of Baltimore, are among the most strenuous advocates of the highest or best standard. The happy effects which follow their faithful execution of our amended laws, and their good conduct in contributing to raise the standard of the inspection, under the direction of our city councils, and from a persuasion of its commercial expediency, is so well attested by a memorial lately presented to the Legislature of Maryland, signed by upwards of one hundred of our most respectable dealers in country produce and exporting merchants, that we cannot express our own opinions better, than by presenting them in the language of that memorial.

"The City of Baltimore, since its Incorporation in 1796, feeling the immense importance of having a proper and honest Inspection of flour, in which it had an interest not incompatible with that of the growers of wheat, or with that of the millers, its corporation has spared no effort, or attention, to devise the most effectual means practicable to attain so desirable an object. Its Ordinances on the subject are the fruit of inquiry, observation and experience. Having called in aid the judgment of the wisest citizens, and sent two of the Inspectors to Philadelphia to ascertain the standard adopted to that City, and the practices pursued in that older market; the provisions on this subject are now well matured, and have had the effect to raise the reputation of Baltimore flour in Foreign markets, and place it in a rank with that from Philadelphia. Previous to those provisions, the character of Philadelphia flour stood higher than any other shipped from the United States. The reasons why Baltimore flour then stood lower than that shipped from Philadelphia, were obviously the former mode of appeal and the frequent inspection of the article in dark warehouses. The evidence of these evils produced the present excellent method of appeal, and inspection in the open air, so that universal satisfaction has been consequently given to all parties concerned in the matter. There are three inspectors, all of whom are principals, who change their districts weekly, and are known to be men of approved skill and incorruptible integrity."

This statement let it be remembered, is given by those who in this large market, deal most extensively in the article. It satisfies us, that it was entirely owing to an error in the former decisions of our city councils, that the standard of our flour inspection was found by experience to be commercially, too low. It unequivocally defends our inspectors from the charge of wishing to degrade the character of our flour; or of being adverse to its improvement. It assures us, that the flour inspectors of Baltimore have been found to be impartial, and faithful officers; and we are willing to believe that the inspectors of other cities are as virtuous, as those of our own.

If inspectors find it difficult to determine the quality of each barrel with accuracy, how much more so must it be for the consumers and especially for the exporters, to inform themselves upon this subject? It appears to us impossible in the management of an extensive commerce, to do without a class of persons, whose business it shall be to ascertain the quality of commodities. In this country we call such persons inspectors. They are appointed under laws which govern their decisions, and guarantee their fidelity. And although such office or regulation may have no existence in Europe, still we apprehend that the same duties are there performed under a different name, but with no better security against imposition. In Europe, thousands of persons are employed as brokers drawing samples, and ascertaining qualities. And in this country we have to decide whether it is best to retain a few inspectors, or dispense with them, that we may employ more brokers.

We are convinced that Mr. Coles has misunderstood both the disposition and interests of inspectors; and we believe, that this will be made still more obvious, by an examination of the third proposition.

From what has already been said, we think it appears, that whether the reputation of an inspection be low and even degraded; or high and in great estimation, we may fairly consider the legal enactments establishing the quality of the inspected article, as the true and immediate causes of their reputation. When those whose duty or right it is to establish the quality of an inspection, are deciding upon the degree of fineness that shall constitute the standard, they will naturally be governed by different views, turning wholly upon expediency, as connected with the interests of those who are concerned in the production, use, or sale of the commodity. And hence we find that various standards have been established in several of our cities. In New York and Frederickburg the lowest grades, that we are acquainted with, had been adopted in their inspection of flour; and in Philadelphia the highest existed, until Baltimore recently established the same qualities. Of Richmond flour, we know but very little; not much more, than Mr. Coles appears, by his memorial, to have known of Baltimore flour.—Now the different estimation in which the inspections of these cities have been and are still held, by those who consume their flour, comes directly in support of the opinion, that it is an easy matter to establish a standard of quality, possessing sufficient accuracy to answer every commercial purpose. The late attempt to improve the flour inspection of New York, and the recent change which has been made in that of Baltimore, are both attributable to the action of the same cause. The inferiority of their inspections was depriving those cities of advantages in other markets. It was found to be the interest of the farmer, miller, inspector and merchants to gratify the consumer by improving their qualities. It has been discovered that the interests of all are affected, by the character of the inspection, and that they are best promoted when the established qualities are so good as to acquire a high reputation,

and by consequence to command an extensive sale. But upon this point the memorial of Mr. Coles appears to be replete with contradictions. At one time it assures us, that in order to increase the quantity of the manufactured article, by doing which his fees would be augmented, it becomes the interest of the inspector to form a degraded standard, and it represents him as always adverse to any improvement in the quality of the inspections; whilst in other passages he tells us, that the flour of New York has been excluded from markets by its degraded character, and he warns us that the United States are in danger of losing the advantage of supplying markets in which the excellence of their flour, has heretofore, caused it to be preferred. But we will not enlarge upon those contradictions, for we are satisfied that however degraded the reputation of an inspection may be, it should be usually referred to the baseness of the legal standard, and but very seldom, to the turpitude of inspectors, or improper dispositions of manufacturers.

A desire on the part of those who are particularly interested in having our inspection laws properly framed and faithfully executed, is not only highly honourable, but may be very useful; and we therefore hope, that it will always exist and be ever discreetly and justly exercised. There will then be no difficulty in ascertaining to what cause, the general reputation of an inspection is attributable. And when this is acknowledged, we can easily remedy any defect, by revising our standards, or removing our officers. We can if we please secure for our inspection the highest reputation, by causing our own superfine brands to be put, only upon the very best quality that it is possible to make. But of the expediency of establishing this exalted standard, those are the best judges, who deal most in the article, or whose duty it may be to inform themselves on this subject. We presume however, that there is a height beyond which the superfine standard cannot be advantageously carried. For we have often seen, and made use of a superior kind of which no great deal is manufactured.

It is called in this city family or Baker's flour. It is so much better than superfine, that it always commands from 50 cents to one dollar more per barrel. It is made under the well founded expectation of getting a price for it, as much above that of superfine, as the article itself may be intrinsically worth. And this difference is paid upon the mere representation of the manufacturer.

These facts lead us to suggest, that our inspection laws might probably be improved, by inserting a clause calculated to excite individual enterprise, and intended to give a mixed reputation to our flour: one that is general, depending upon the brand of our inspector, the other particular, and resting upon the name of the manufacturer. The fanciful names of our mills are now often branded upon our flour; and these, we think, might advantageously give place to the real names of the manufacturer. Individual reputation could then be acquired, and the community be at the same time protected from the gross impositions and embarrassments to which we believe an abandonment of the inspection of quality would immediately lead.

If then the character of our inspections is determined by the standards of quality enacted by our statutes, the third proposition of Mr. Coles, is deprived of its force; for our inspection will be good or indifferent according to the requisitions of the law; and we shall ordinarily find ourselves under no necessity to impeach the motives of manufactures or inspectors in order to account for the degraded character of a city inspection; nor be subject to false and injurious impressions as to the character and conduct of these useful and respectable portions of our fellow citizens. This we conceive not only the right, but the absolute duty of the manufacturer to make his commodity no better than the standard, when he expects to get no more for it, than is currently obtained for the standard quality. For if he should regulate his practice by the opposite opinion, he would soon be ruined and driven from his business. His competitors by making their articles no better than the law requires, could afford to sell their flour lower than he could, paying the same price for wheat, and yet gain; whilst he would be losing by making his commodities better than the standard. Against the commission of this destructive error, his interests will give him early and useful admonitions, and by the strict observance of these, he will improve his own situation, and best perform his duty to society.

Since then we are convinced that the interests of all, are best protected by the operation of inspection laws, and that the integrity of our inspectors, and the reputation of their brands, may be easily preserved by proper vigilance on the part of those who frame our statutes, we shall content ourselves at present with recommending, that frequent examinations of the inspected articles be made by those whose duty or right it may be to amend our laws. And in our next number we shall present some very interesting extracts from a publication, by Mr. John C. Brush, of Washington City, upon the comparative quality of Wheat and Flour, in the northern and southern states, with instructions showing how to improve the quality, &c. &c.

Communicated by G. W. Jeffreys, Esq. of North Carolina, for the American Farmer.

Virginia, Port Royal, Dec. 6, 1817.

DEAR SIR,

I have not the means of ascertaining the Linnæan name of either of the grasses I sent you the seed of, nor whether the tall kind is that described by Doctor Mease, nor whether it is the species of grass imported by Dr. Muhlenburg. Several of my sons have been in Pennsylvania lately, and saw it only at Dr. Logan's in a very small quantity, who called it by all the three names you mention. It is probable, either that it has been neglected, or inadequately tried, or that it may not suit that soil or climate.

Stocks of all kinds graze well on the meadow oat, though when mixed with red clover, they prefer the latter. Hogs are most pertinacious in this preference. It bears grazing better than any other grass, and more frequent repetitions of it, allowing it short intervals to spring up, after being eaten down. It affords, after being well set in strong stiff land, grazing nearly or quite through the winter. Cut, after it is in flower, and before the seed ripens, it makes fine hay; and good, after a portion of the seed is ripe. The tops being clipt off with a sickle for seed, the residue will make tolerable hay, and this is the best mode of saving seed. As soon as it springs after being cut, I begin to graze it, and con-

tinue to do so until March. Observation determines the rest it requires. But I do not graze it, whenever the ground is so wet, as to admit of being poached. It holds the ground longer, and resists intruders more vigorously, than any highland grass I know. I mean gradually to make it my chief resource both for hay and grazing.

I suppose the red top and herd's grass to be the same. Well reclaimed meadow land suits it best. It will grow well on level stiff high land. It is better for hay than grazing, but I graze it severely after it is cut for hay, until Christmas. All stocks are extremely fond of it, and the only grazing defect it has, is, that it does not yield as much in that way as some other grasses. If the ground is too wet, rushes creep into it; when the ground is dry, and it is much grazed, white clover slowly assails it; but it is more tenacious of its hold, than any other artificial lowland grass I know. I prefer sowing it in the fall, either upon wheat immediately sown, or among corn, the ground being first put in tilth. In both cases it is better to cover it as slightly as possible; but in both I have left it uncovered, to the guardianship of the weather, with success. Sown, mixed with timothy, a better crop may be expected the first year, but it will gradually eat out the timothy, and I have had it good and thick, for eight years after every stalk of the timothy has disappeared. It makes both good seed and hay at the same cutting, so that an abundance of the former can be saved with little expense. Hence, the quantity to be sown on an acre is not important, because grass seed cannot be sown too thick. Could it be cleaned of the chaff, a peck would amply suffice for an acre, but as this is difficult, I would recommend a bushel. But the quality of the seed, like clover in the pug, must be estimated upon view.

My hogs are grazed, ringed, on clover and meadow oat; and I find, when fattening, much benefit from such grazing two or three hours daily, near their pen.

I sow wheat, when I have time to pursue the best mode in my opinion, with trowel hoes, all small, (except that for opening the middle furrow) drawn by one horse, plowing with the mould board towards the corn, and thus raising the ridge on which the corn grows. The mould boards are narrow, and placed three or four inches above the bottom of the plough, so that it may work deep, and cover the wheat shallow. The middle furrow is opened as deep and wide as two strong horses can effect it, by a large trowel hoe plough, and two large mould boards. I strive to have it deep and wide, and without wheat, and many experiments have convinced me, that the crop is thereby increased, however the surface may be contracted, in addition to saving labour in the subsequent preparation for corn, and the improvement by deepening the soil. Harrowing upon a hill fallow, is undoubtedly the best mode of putting in wheat, but among corn, often foul with growing grass, and in narrow five and a half feet ridges, it is rejected, as inconvenient, and too slightly working the ground.

I dare not flatter myself with so beneficial a result of my efforts to advance the science of agriculture, as you are pleased to expect, but they shall be co-extensive with my ability; and I hope, that actuated by the same motive, instead of withholding your correspondence, you will hereafter reciprocate with me the discoveries of your experience, and extend the benefits of your exertions to

Yours, respectfully,

JOHN TAYLOR.

N. B. October and November, rather the latter, are the months in which I sow the red top seed.

FOR THE AMERICAN FARMER.

Description of a MILL for getting out Clover Seed,

BY CALEB KIRK.

Clover is considered the best grass cultivated in the United States, especially for the reclaim-

ing and improving exhausted soils; when a judicious process accompanies the management in the culture, none exceeds it.

Under the impression of those considerations, and to remove at least, one of the obstructions to a more general and liberal use of the seed of so valuable a product, I take the liberty of presenting (for the American Farmer) a specification and description of a mill for the purpose of liberating the seed from the head and pods—a process not perhaps so well understood as the culture of the grass.

The greater the facility of obtaining the seed, the more liberality in sowing it may reasonably be expected.

The construction of a mill in every district of country that has began the culture of clover, has a stimulating effect—it gives every farmer the opportunity, whether his crop is less or more, to have the seed readily prepared, either for his own use, or the market, at a certain rate of cost or toll, which has generally been the same as the toll for grinding of grain—one tenth.

In the details, some technical terms will be made use of, to give mechanics a better understanding of the subject; especially mill-wrights, as it is within his province to erect machinery of that kind.

A moderate water power will drive a four feet stone, whose friction is confined to about six inches of the outer skirt, the more central part being hollowed out about two inches to receive the chaffy seed, especially the running stone, whose velocity ought to be from one hundred to one hundred and twenty revolutions in a minute.

The head of water, the water wheel, and gearing, must be proportioned, and constructed to produce the motion and effect desired from the stones; this part of the subject may be readily understood by a mechanic of common skill.

The mill house should be at least two stories high, and capacious enough to contain the machinery, and have room on the second floor to hold several wagon loads of the chaffy seed, as the season for getting out seed presses on the miller, for room to store the bulky article away, if brought faster than his mill can work it off. The speed of working depends much on the weather—if wet or damp, it is less speedy than when dry and frosty.

A strong frame, or husk (as it is termed) is built over the gearing, similar to a grain mill, which consists of a main cog-wheel on the water wheel shaft, that drives a counter wheel, that works in the trundle, or pinion on the stone spindle, as the case may be, either wood or iron gearing. This husk should not be as high as the first floor, by about twenty inches, in order that the running stone may run immediately below the floor; that part of the floor above the stone to be moveable, so that the stone may be hoisted up by a crane, to dress occasionally—and which must be kept two inches hollow near the eye, which ought to be fourteen inches diameter, to receive the seed without choaking, leaving as before stated, about six inches of a true face at the circumference of each stone, to be picked rough, but not furrowed as grain stones—the quality of them should be granite of a sharp grit, not very hard, (compared with grain stones) the runner is hung

on a stiff rine, with either three or four horns: hung very true, and a tube or cylinder of sheet iron fitted in the floor, immediately over the eye of the stone, projecting into the eye, near to the rine, to pass the seed through, and which prevents its coming into contact with the stone in passing in, and by that means also prevents its being choaked by attaching to the eye by the centrifugal motion, and which would otherwise have to be attended and liberated by hand assistance. I shall be more particular on this point, as it is one of the greatest importance to get a regular feed administered to prevent delay in grinding as well as regularity in the cleaning apparatus.*

I shall suggest a wooden spring, (though I never saw it used) fastened stationary, with the lower end made small and elastic to touch the rine, as the horns would be striking the lower end of it, keep it in a continual tremour and by that means shake the chaffy seed into the stones with much regularity; this being accomplished, the miller's judgment must regulate the operation of the stone to give as much *friction* as they will bear without bruising the seed, which falls from the spout that delivers it into the mouth of the elevating buckets, as they are passing by, and carrying it up to the top of the upper story, enclosed in a box, or pipe twelve inches square, with more inclination than grain elevators, about five feet inclined to ten of perpendicular height; the elevator box to be a little more enlarged at the first receiving the seed, by having the upper side or cover not very close to the bucket, to prevent choaking by any irregularity that may happen in the delivery from the stones, as those irregularities will sometimes happen from much short straw, or rubbish in some parcels of seed.

The elevator delivers the seed into the first fan, falling on the shoe, or coarse riddle that receives it, and takes all the straw out, leaving nothing to pass through more than is necessary to be returned back to the stones for a second grinding—the dust having blown out through a tube, or pipe the full width of the fan, and sixteen inches deep that conveys it through a window quite out of the mill.

The seed and chaff that yet contains seed, falls into a second fan, about half the size of the former, by falling on a shaking sifter, with a fine, brass wire sieve—all the seed is sifted out that has been liberated from the pods and the

* It is a very important point to have a regular uninterrupted motion in the fans, being a light substance either in the chaff or out of it, as a little variation, by blowing too hard, would blow the seed out with the dust, and to slack a wind don't sufficiently separate the chaff that has seed in it, from that which is relieved from it by the mill stones. As the motion of the fans are regulated entirely by the motion of the other works, and the stones being often impeded by too liberal feeding, especially after a want of feed has preceded; the writer would propose an effectual remedy to such as would go to the small expense of putting up a small light water wheel purposely for the fans, (distinct for the fanning) a very light power would be sufficient to be driven by a band or strap, (about the power of one man to turn by hand) as both the fans, if built light, would not require more strength than a common barn fan to turn them, a considerable quantity of seed could be saved by regular fanning, that otherwise is often carried out with the light chaff, by irregular wind, often made from the unavoidable change of motion from the operation of the stones.

residue is returned to the stones, to pass through with what is grinding.

This process is continued till the parcel is finished. A season that is favourable to producing seed, and the mill in good order, ten or twelve bushels may be taken out in a day, if well attended: but under adverse circumstances the lack of seeds in the pods, &c. sometimes, not perhaps half, nor one fourth of that quantity can be procured with the same labour—some seasons very little seed is procured; in many places (the success of milling keeps pace with the farming in this business.) It is a convenience that affords advantage to a distance of five or six miles of a circuit to each mill, or further, but if to be transported too great a distance, the loss of time, the toll for grinding, loss of manure in offal, &c. is a draw-back worth consideration to every farmer that has a good barn floor to tread out with horses—although it is very disagreeable to horses on account of dust, and must be unhealthy, the same observations will apply to the miller's case who attends on a clover mill. A person with weak lungs ought to avoid the business; yet under all considerations mills seem to be preferred, as they are now generally erected in every neighbourhood through the clover districts, where water power is convenient for them—this is an argument in their favour—the writer is strongly impressed with a belief that several improvements may be made on them besides the one noted.

CALEB KIRK.

Brandy Wine. 18th 1st Mo. 1821.

DEEP PLOUGHING.

Not requisite in the cultivation of corn, after planting.

MR. SKINNER,

That corn does not require deep cultivating is a fact that you may give to your correspondents, without the fear of contradiction from those who practically know any thing upon the subject; provided, at all times, sir, the field has been well broken, that is, ploughed not less than six or eight inches deep. All that is then wanting is to keep the ground clean. The power and vigour of the corn plant is not generally understood, but if any of your friends will give themselves the trouble to open a piece of ground twelve inches deep, and plant it in corn, they will find when it has obtained its growth, that the greater part of the roots have reached the hard pan, below the loose earth. Hence it is, sir, that this plant rarely fails to give a good crop upon land that is well opened—the crop of 1819 had no rain after it was eight or ten inches high, and yet I made nearly the half of a full crop. Twenty years ago my land was two sandy and light to grow wheat; by this kind of cultivation, and a very liberal use of plaster of parish and grass seeds, I now make good crops of wheat, say from twelve to seventeen bushels for one seeded. My best crops have invariably followed that of corn; for strange as it may appear, I have failed six times out of seven to make wheat upon a clover lay; I have therefore, abandoned all fallow for wheat. The summer fallow I consider a beautiful prepara-

tion for wheat, and a kind of cultivation well calculated to improve land; but as I have many dependants, I have found it necessary to grow great quantities of corn for their comfort.—Farmers have a notion that they must cultivate their land with a view to its protection from the rays in the sun; this will be found to be one of the follies that time has sanctified. Upon my experience I venture to say, that the sun will fatten and fructify the soil. I advance nothing upon the credit of philosophy or speculation. If a farmer will plough well, and mix, and separate the parts of his soil, it will, if poor soon acquire its pristine power; beyond this he may not expect to go, without the aid of manure. Captain Smith, who has given us the history of the settlement of Virginia, states that his average crops of wheat exceeded that of the average crop of England about ten bushels per acre; how much will the comparison now hold? Is not the average crop of England more than double that of Virginia? I blush, sir, when I say I believe that this is making the most of our case. I will not attempt to explain all the causes which led to this monstrous change—it is sufficient for my purpose to name two of them—devotion to the blooded horse, which created the necessity of a plough, corresponding with his powers—this was a little wriggling thing called a Dutch plough. Had the Devil been called upon for two agents by which the soil of a country should be destroyed in a given time, I am persuaded that with all his experience and observation, he could not have produced any thing better. Those wretched agents opened the earth, perhaps two inches deep, and to keep down grass and weeds, it was necessary to cross plough every ten or twelve days—every gust swept away the greater part of the loose earth, and this process went on until the soil was all swept away, when the land was abandoned as useless. No grass cooled or ornamented the bosom of this persecuted soil, save that which the bounty of nature gave. Necessity called loudly for a change, nor called in vain. Industry and skill are now busy in repairing the breach, and we have every reason to believe that they will receive their reward.

A VIRGINIAN.

FOR THE AMERICAN FARMER.

APPLE PEAR AND PEACH WINES.

The manufactory and preparation of distilled and fermented liquors, are curious and important arts in Europe. The glass manufactories facilitate the business there, but the expense of bottles, corks, wax, and packages, and of bottling, is very considerable, even in Europe. It is much greater in our seaports; and in the country, bottling is almost impracticable, particularly in our interior counties and settlements. Some ideas will be offered on this subjects which have been under consideration for a considerable time, and which, it is believed, will be capable of extensive application, by scientific men of the proper arts and trades. Experimental philosophy is a safe guide to the manufacturer.

It has been observed, and ascertained by long and constant experience, that Burgundy, Champagne, and Bordeaux (or Claret) and other French wines, can only be saved by means of corked and sealed bottles; while Madeira, Lisbon, Xeres or Sherry, Saint Lucie, Tene-riffe and Fayal wines, can be kept in casks, half full, and unbunged, and in decanters and bottles without stoppers or corks, and improve in that situation. The beer, ale, porter, cider and perry of America and England, require the corked bottle, and especially in our climate. The ascertained difference in the use of French wines, which grow musty and sour in half filled opened vessels, and of Portuguese and Spanish wines, which become more wholesome and more pleasant in the same situations, has made a strong impression on the writer of this paper. The reason of this difference appeared to be a curious subject of reflection, and seemed likely to be of importance. It is believed to be this: that the French and similar wines contain principally their natural fermented spirit, and are subject to a new process of fermentation upon the introduction of the air, when the cork, the bung, or part of the contents of a bottle or cask are taken out. But the Portuguese, Spanish and similar wines, contain a sufficient portion of distilled spirit, (not susceptible of fermentation) so as to withstand that introduction of the air, which occasions the process of fermentation in bodies, not containing such a sedative. It is known that even the good Clarets are a little brandied, and yet are of an excellent flavour, and the Pacharette and other fine Xeres, Carcavella and other fine Lisbon, and the several denominations of fine Madeira wines, are believed to have been always sufficiently brandied to arrest a new fermentation, and are thought to be, of late years, highly brandied. The important fact is therefore ascertained, that various delicate, or rich and well, or high flavoured wines, are not so far injured in their flavour, or character, by being brandied as to be rejected by the most delicate, correct or fastidious palates. It is not doubted, that much of the nut taste in wine, is produced by the brandy; and this is an esteemed flavour.

Considering then, that the finest white wines of Spain and Portugal, (including the island of Madeira) are prepared with a delicate distilled spirit, extracted from the same fruit, it is suggested, that our cider, perry, domestic wines, beer, ale, porter, and (if we may so speak) our peach-cider, may be prepared in like manner, with a homogeneous spirit distilled from the juice of apples, pears, peaches, grapes, or currants, or from malted barley, or from unmalted Indian corn, according as our fermented liquors are respectively made out of those fruits or grains. It is not known, that a fermented liquor or drink has ever yet been made out of the peach, after the manner of cider, perry, and wine; but from the exquisite and unrivalled flavour of our peach, from its present extensive cultivation, and the ease with which that cultivation could be extended, it seems not to be a romantic suggestion, that a very exquisite substitute for some kinds of wines might be made from the juice of the peach, prepared by a close

imitation of the European or Madeira wine manufactory. To our landed interest, the infusion of a homogeneous spirit into our cider, and beer, so as to enable us to dispense with all the actual expenses of bottling, and the losses of breaking, would be an immense object. The consumption of beer and cider would be greatly increased, and a new mean of contending against the use of distilled spirits, would be placed in the hands of the wise and good, so far as this suggestion may stand a trial.

DIRECTIONS FOR PLANTING COTTON.

To the Editors of the Carolina Centinel.
GENTLEMEN,

Anxious to procure all the information in my power, on the subject of cotton cultivation, I wrote to a friend for information; you have it herewith. The writer is a considerable planter, and a gentleman of much experience and practical knowledge, and his instructions, I think, are worthy of attention; if you think so, you will please insert his letter in your paper, and oblige a

Friend to Agriculture.

DEAR SIR,

It is with much pleasure I answer the questions put to me relative to cotton planting. I will most willingly communicate to you my knowledge upon the subject.

1st. In the interior counties of Georgia, black seeds or Sea Island, is not planted. It vegetates too long for the season. The weed would be luxuriant, but the product little or none.

2d. The time of planting is from the 1st to the middle of April.

3d. We plant in beds, five feet apart, on good land. The distance is to be regulated by the quality of the soil; on very fertile land, they ought to be six feet, in middling soil, four feet apart. Some who plant poor land, make their beds three feet apart, and leave the cotton thick on the beds; the poorer the soil, the closer or thicker ought the cotton to be left.

4th. We plant, or cover the seed shallow, from one and a half to two inches deep, and strew the seed pretty thick, from one to two bushels to the acre. You had better roll, or rub the seed in dirt, before planting; this process separates the seed, and you can drop them with more facility and exactness.

5th. We commence thinning when the plant is about six inches high. You ought to make several thinnings, (i. e.) don't thin your cotton down, as it is called, the first or second time.

6th. In the distance that the cotton plants or stalks are to be left from each other, you are to be governed by circumstances: in rich soil, from twelve inches to two feet. Sometimes, I leave two stalks together, when there is a vacancy on either side.

7th. To go over your cotton once a fortnight is a good rule. It ought to be stirred often, and never suffered to be grassy, if possible. You cannot plough more than two or three times, before the limbs or branches will interfere. I have had my cotton beds scraped with the hoe, before the plant was up. Cotton, when small

will not bear the dirt to be thrown to it; but after it is some size, you ought never to haul down, or throw the dirt from it, unless it is grassy, then if necessary, you may throw the dirt from it, to destroy the grass, and in a day or two throw the dirt back, and haul it up to the cotton—taking care never to let the roots, as it is called, (i. e.) the lower part of the plant, while young, be exposed to the sun for any length of time.

8th. We leave off working at no particular time. The field should be kept clear of grass, as it will be in the way of picking out the cotton. In the early part of the season you ought, every time you hoe, to enlarge the beds a little, by hauling up the earth to the cotton; never diminishing the bed in hoeing if you can avoid it.

9th. Six acres of Cotton, and eight acres of corn to the hand, is a rule with many of our planters, who use the plough.

10th. I have planted on the same land sixteen crops in succession; but a shift of fields answers much better, and I would recommend your breaking up, or ploughing your cotton land in the fall, or early in the winter, if you can effect it. In low lands the beds should be higher than in high lands.

11th. The Rot is a disease in the pod or bowl, and prevents its opening; the cause is unknown. If it is ascribable to an insect, ploughing the land in the fall, would have a good effect in preventing it. The same hoe which is used in corn, is used in the culture of cotton. A hand will pick, or gather from 60 to 100 pounds of cotton in the seed, with ease, per day. I have heard of some hands gathering 120 pounds in a day. The hands on a plantation, ought to average 65 pounds.

Yours, most respectfully,

P. S. I intend making an experiment next crop, by topping and suckering a few acres of cotton—I am persuaded it will be of very great advantage to top about the first of July and take away the suckers as often as they put out and get to any size. Topping all the cotton I plant, without taking away the suckers, is a late practice of mine, but I top so late, I don't believe any suckers of consequence put out, say the 15th or 20th of August.

ON ONIONS.

Laurel Spring, October 20th, 1820.

MR. SKINNER—In your first volume, No. V. page thirty-six, middle column, you have the following remark.

The onions that were sown at an early season, with an expectation of their growing to sufficient size the first year, for table use, &c.

Which induces me to believe that you do not cultivate the clove or apple onion, which is certain to mature the first year. I herewith send you five of the cloves, and if you wish more of them, some of your merchants, no doubt, trade to Savannah, and if you direct me with whom to leave them in that place, it will give me pleasure to supply you. They may be planted either in the fall or spring, in rows, eighteen to twenty inches wide, and from nine to twelve inches apart in the rows, cultivated as other onions, and taken up in August,

when the tops have perished. They do not commonly bear seed the first year, and on that account some of the onions that are taken up in August are to be re-planted when you plant the cloves. I shall plant to day.

I have done,

JOHN A. JONES.

P. S.—With us they have superseded the cultivation of the sort which I presume you cultivate.

BLACKING,

Which when on the boots or shoes can, be rubbed with a cambric handkerchief without soiling it in the least, and will assume the same lustre after being plunged in water as before.

Quarter of a pound ivory black, 1 ounce linseed oil, 1 ounce spirits lavender, 1 ounce oil vitriol, 2 ounces sugar candy, 3 pints best vinegar, and juice of 2 lemons.

NOTE.—The ivory black and linseed oil to be well mixed in a mortar, the sugar candy to be pounded, the vitriol to be put in a glass of water, and let stand till cold. The spirits, lavender and oil vitriol not to be put in until all the other ingredients have been well mixed.

Lead coloured Paint for preserving Iron.

Take a small quantity of common Litharge and place it over the fire in a shovel, afterwards, when sufficiently warm, scatter over it a little flour of Brimstone which will instantly convert it into a blackish colour, and which when ground in oil, makes a good dark lead colour. It dries quick, gets remarkably hard, and resists the weather better than any other lead colour.

Composition for healing wounds in Trees.

Take of dry pounded chalk 3 measures; and of common vegetable tar one measure: mix them thoroughly and boil them, with a low heat, till the composition becomes of the consistency of bee's-wax, it may be preserved for use in this state for any length of time; if chalk cannot conveniently be got, dry brick dust may be substituted.

Application.—After the broken or decayed limb, has been sawed off, the whole of the saw cut must be carefully pared away, and the rough edges of the bark, in particular must be made quite smooth; the doing of this properly is of great consequence, then lay on the above composition hot, about the thickness of half a crown, over the wounded place, and over the edges of the surrounding bark, it should be spread with a hot trowel.

To the Agriculturists of the United States.

The subscriber having made a voyage to Europe for the express purpose of ascertaining the present state of Agriculture (particularly in England and France) and procuring such

SEED, IMPLEMENTS AND BOOKS.

Upon the subject, as appear to be best calculated to promote its interest in the United States, has just returned with a general assortment of the above articles, which are for sale at his wholesale and retail

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It is his intention to add to his establishment, in a short time, an assortment of FARMING TOOLS, of the best construction and make, and in fact, to make it, in ever respect, worthy the support of the agricultural interest of his country, whose patronage he respectfully solicits.

The Inventors and Manufacturers of all kinds of FARMING UTENSILS are respectfully informed that he will receive, and sell upon commission, any articles in the agricultural line, upon the most reasonable terms. His present stock consists of the following

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Viz:—Improved Hay Making Machines, upon high wheels. These are great labour saving machines; are drawn by one horse; are very strong and durable; and by their use, a heavy crop of grass, cut in the morning, may be made fit to house the same day.

Price	\$140
Devonshire Hand Apple Mills,	60
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Broadcast Sowing Machines, which scatter small seeds with an exactness that cannot be done by hand	20
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Expanding Horse Hoes from 8 to 18 inches	30
Expanding Hand Hoes	18
Cultivators with 7 irons and 3 wheels	60
Flexible Tubes and Gags for Cattle	10
Ditto ditto for Sheep	5
Banbury Turnip Cutters	45
Bow Index Gauges	25
Box Churns various sizes and prices	
Washing Machines	8
Weighing Machines,	\$18 and 40

BOOKS.

The FARMERS' COMPANION, being a Complete System of Modern Husbandry, including the latest improvements and discoveries, in theory and practice, by R. W. DICKSON, M. D. author of practical agriculture, of the survey of Lancashire, and Honorary Member of the Board of Agriculture. Second edition, illustrated by 104 plates, 2 large volumes, \$15.

All the following Books are complete in one volume, the prices of which vary, according to size, plates, &c. from one to five dollars.

Viz:—Moubray on Poultry, Swine and cows; Keys on Bees; Tibb's Farmer; Cully on Live Stock; Curtis on Grasses; Carnell on home made Wine; Twamley on the management of the Dairy; Blaikie on the management of Hedges; Huish on the management of Bees; Griseithwaite's new Theory of Agriculture; Hornby on Lime as Manure; Johnson on Salt as Manure; Young's Farmer's Calendar; Radcliffe's Agriculture of Flanders; Beaton's new system of Cultivation; Huish's instructions for using the Bee Hive; Communications to the Board of Agriculture; Wilkinson on the improvement of Cattle; Curwen's Report to the Workington Agricultural Society; Wildman on the management of Bees; Parkes on Salt as Manure.

A general view of the state of Agriculture in the following counties in England and Scotland, drawn up by order of the National Board of Agriculture, and are officially correct. Each complete in one volume, and varying in price from two and a half to five dollars. Viz: Bedford, Bucks, Cambridge, Cheshire, Devon, Durham, Gloucester, Hereford, Hertford, Hunt-

ington, Kent, Leicester, Lancaster, Lincoln, Middlesex, Monmouth, Norfolk, Northampton, Northumberland, Nottingham, Oxford, Shropshire, Suffolk, Surrey, Sussex, Warwick, Worcester, Wilts, York, Berwick, East Lothian, Roxburgh, and West Lothian—all by different authors, forming a mass of agricultural information from the pens of the first agriculturalists in the world.

SEEDS.

Talavera Spring Wheat—White Essex spring do.—Purple Bearded spring do.—This is the Wheat of which an account was published last summer two years. The miller who ground a small quantity of it says, that four bushels are sufficient for a barrel of flour—Egyptian Rye—very early Potatoes—Lucerns—sweet scented Vernal Grass—Trefoil, or yellow blossomed clover—Cow, or Marle Grass—St. Poin—Rye Grass—Cocksfoot Grass. This grass will bear to be fed closer than any other.—spring Tares—Winter do.—Rape—Canary—single blossomed early frame PEAS—superior early do.—early Charlton do.—Dwarf marrow do.—Large marrow do.—Large Green Imperial marrow do.—Dwarf do.—Green marrow do.—Knights marrow do. very large—Egg do.—Dwarf Prussian Blue do.—Royal Dwarf do.—Spanish do.—Windsor BEANS—Turkey long-pod do.—Green do. do.—Early Mazagan do.—Strasburgh ONION—White Spanish do.—White Portugal do.—Brown Portugal do.—Blood red do.—Silver skinned do.—Deptford do.—Welch do.—Lisbon do.—Tripoli do.—Flag LEEK—London do.—short Orange CARROT—large swelling PARSNIP—SCORZONERA—SALSAFY—early Dutch TURNIP—Early Yellow do.—Early Stone do.—Six weeks do.—Long French do.—Green round do.—Red round do.—White round Norfolk do.—Globe do.—Malta do.—Yellow Bullock do.—White Tankard do.—Red Tankard do.—Green Tankard do.—Yellow Sweedish do.—or RUTA BAGA—Scarlet short top RADISH—Salmon do.—white turnip do.—red turnip do.—black Spanish do.—long white Naples do.—Grand Admiral LETTUCE hardy green do.—Tennisball do.—brown Dutch do.—early frame cabbage do.—white cabbage do.—Marseilles do.—Drumhead do.—Dwarf forcing green coss do.—early green coss do.—Large green coss do.—White coss do.—Egyptian coss do.—Bloody coss do.—Large brown Bath coss do.—Florence coss do.—Silesia do.—Imperial do.—Prickly SPINAGE—round do.—long rooted red BEET—turnip do. do.—white do.—green do.—green curled EN-DIVE—White do.—Batavia do.—Italian upright CELE-RY—solid white do.—solid red do.—Patagonia do.—garden CRESS—curled do.—NASTURTIUM—grass SORREL—French do.—white MUSTARD—brown do.—CORN SALLAD—plain PARSLEY—curled do.—Hamburgh do.—early CAULIFLOWER—late do.—early dwarf CABBAGE—early York do.—large York do.—large Battersea do.—sugar loaf do.—early Dutch do.—drumhead do.—large flat Dutch do.—red Dutch do.—large green Savoy do.—dwarf do. do.—yellow curled do.—BRUSSELS SPROUTS—green curled BORECOLE—brown do.—Scots CALE—sea do.—early purple BROCOLI—late do. do.—green do.—white do.—dwarf purple do.—early Cape do.—late do.—early prickly CUCUMBER—fine long do.—white spine do.—green Turkey do.—white do. do.—Paris Rock Cantelope Melon very fine.

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Balm; sage; pot marjoram; sweet do.; winter savory; summer do.; thyme; hyssop; sweet basil; bush do.; rosemary; lavender; Fennel; aniseed; caraway.

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E. S. THOMAS.

February 2d, 1821.